

# VI. WETLANDS PROTECTION PLAN

## PURPOSE AND AUTHORITY

In January 1988, the N.C. Division of Parks and Recreation produced the Wetlands Addendum to the Statewide Comprehensive Outdoor Recreation Plan (SCORP) for 1984-89, entitled *Outdoors North Carolina*. That document identified and described federal and state programs related to wetlands protection and assessed the effectiveness of existing wetland protection efforts. It also reported on wetland trends, protection alternatives, and protection priorities. This chapter, developed in cooperation with the N.C. Wildlife Resources Commission, updates those subjects and the ongoing planning activities by state agencies to protect wetland resources in North Carolina.

It is the purpose of the Wetlands Protection Plan to provide an assessment of wetlands issues and opportunities. This is in accord with the 1986 federal Emergency Wetlands Resources Act (P.L. 99-645) and with the SCORP planning practice of focusing on critical natural resource/outdoor recreational issues.

Section 303 of the Emergency Wetlands Resources Act calls for each state to prepare an addendum to its SCORP. State plans are to be consistent with the National Wetlands Priority Conservation Plan prepared by the U.S. Fish and Wildlife Service. The National Plan acknowledges that individual state plans need not be identical to the federal model, but state proposals for Land and Water Conservation Fund grants *"must be consistent with the Plan regarding wetlands loss, threat, and functions and value criteria."* North Carolina's 1988 Wetlands Addendum and subsequent SCORP updates meet these requirements.

## Wetlands Protection Goals and Criteria

The basic goals for wetlands protection in North Carolina are to ensure that all remaining high quality wetlands are protected in perpetuity and that no further "net loss" of wetlands acreage is allowed to occur on a statewide basis. The concept of "high quality" is subjective, but includes such considerations as:

- retention of generally natural and undisturbed conditions;
- exemplary and special biotic communities;
- endangered and rare species of plants and animals;
- wildlife and fishery resources and benefits;
- recreational and educational benefits;
- degree of permanence and potentials for preservation; and
- importance to water quality protection.

Federal Criteria Section 301 of the Emergency Wetlands Resources Act specifies three broad criteria to be used in evaluating wetlands for protection:

- historic wetland losses;
- threat of future wetland losses; and
- wetland functions and values.

The criteria for establishing wetland protection priorities in North Carolina relate both to rarity/uniqueness of particular types of wetlands and their biotic resources and to public benefits and resource manageability. Criteria used to establish wetland protection priorities in North Carolina include:

- relative rarity of natural communities;
- relative rarity of individual plant and animal species;
- threat of conversion or loss;
- quality (representativeness);
- condition (damage or alteration from optimal);
- viability (long-term prospects for continued existence);
- defensibility (protected from extrinsic human factors that might otherwise degrade or destroy);
- public use potential;
- educational and scientific values;
- long-term management implications;
- geographic distribution; and
- importance to water quality protection.

## **Objectives of the N.C. Wetlands Protection Plan**

This wetlands protection plan, including its subsequent revisions and supplements, is intended to:

- help North Carolina comply with Section 303 of the federal Emergency Wetlands Resources Act (P.L. 99-645);
- address important wetlands protection and acquisition considerations;
- establish assessment criteria concerning wetland functions and values, historic wetland losses, and threat of future wetland losses; and
- develop a list of the wetlands with the highest priority for federal and state acquisition in North Carolina.

## CURRENT TRENDS AND INITIATIVES FOR WETLANDS PROTECTION

### Status of Wetland Resources

A wide diversity of wetlands occurs throughout all of North Carolina from the edges of salt or fresh water bodies to isolated bogs and riverine bottomlands. Wetlands are characterized by their soil types, are saturated by water part of the growing season, and support types of vegetation dependent upon or tolerant of the wet soil conditions.

Less than half of the state's original wetlands survive. The *Wetlands Addendum* in 1988 reviewed the status of wetland resources in North Carolina, including trends in conversions of wetlands and development of public policies for their protection. A preliminary estimate by the U.S. Fish and Wildlife Service (FWS) calculated that North Carolina had 5.7 million acres of wetlands covering 17 percent of the state's land area. This rough estimate is based on high-altitude photography taken in the mid-1970s. The FWS estimate of wetlands acreage is comprehensive, including all types of wetlands under the National Wetlands Inventory definition; it therefore cannot be compared with earlier estimates by other agencies whose estimates included only certain types of wetland habitats, mainly those suitable for waterfowl, and did not include wetlands less than about 40 acres in size. The current wetland acreage is likely less, due to an unknown number of acres converted since the time of that photograph.

Wetlands provide a variety of benefits, uses, and functions, including: abatement of water pollution; storage and conveyance of floodwaters; augmentation of surface water flow during drought; shoreline stabilization; habitat for fish, wildlife, and plants, including many rare and endangered species; natural laboratories for scientific research and environmental education; recreational and aesthetic resources; reserves for forests; and enhancement of the overall quality of life.

Wetlands are an important part of North Carolina's natural heritage. Over half the state's threatened biotic community types are wetlands. About 70 percent of the plants and animals listed as rare or endangered species are dependent upon wetlands. The wetlands ecosystems in the mountain region contain an estimated 40 percent of the state's rare and endangered plant species, while coastal wetlands host as many as 70 percent of such species. Of 203 animal species monitored by the Natural Heritage Program as rare or endangered organisms, 152 are wetland dependent or aquatic.

North Carolina has the fifth largest amount of wetlands area of the 50 states. It also has the largest estuarine system on the east coast of the United States, estimated at 2,223,900 acres in extent (Owens, 1981). The Coastal Plain region of the state (comprising about 45 percent of the state's area) contains 95 percent of the state's wetlands, both saltwater and freshwater types. Among the coastal wetlands are those known as pocosins. Approximately 70 percent of the nation's pocosins are in North Carolina. Pocosins are freshwater wetlands covered by evergreen forests and shrubs. Typically pocosins cover thousands of acres and occur on broad, flat plains away from existing large rivers and streams. They are characterized by peat accumulations and are subject to periodic burning. These wetlands have been converted on

a large scale for agriculture and forestry and on a smaller scale for other development. Large-scale peat mining projects have also been proposed, but none have been carried out.

Other freshwater wetlands occur throughout the Piedmont and Mountain regions as well. Many small isolated wetlands harbor an extraordinary diversity of plants and animals. For example, more than 80 species of plants considered rare or endangered are known to occur in the few remaining mountain bogs, fens, and swamps.

Until recent decades, wetlands were not generally recognized for their productive values and, in fact, were largely thought of as wastelands. Projects to "improve" the land by draining, filling, or clearing wetlands were carried out by private and public agencies for mosquito control, development, agriculture, and silviculture. Approximately half the wetlands in existence in all the United States and more than half the wetlands present in North Carolina before European settlement have been destroyed, and losses of wetlands are continuing at a disturbing rate.

Most imperiled are the freshwater wetlands, which continue to be lost across the state. Several wetland types are thought to be in most immediate need of protection due to imminent conversion pressures. These are freshwater marshes, bogs, and fens, bottomland hardwoods, and isolated swamp forests. Efforts to protect and preserve these wetlands carry a special urgency because their total acreage is limited and their extent has already been vastly reduced.

## **State Wetland Agencies and Their Roles**

A complex array of federal and state programs relate to the management or protection of wetlands in North Carolina. On the federal side, the main programs are authorized by the Clean Water Act Section 404, the National Environmental Policy Act, the Wetlands Reserve Program, the Emergency Wetlands Restoration Act, the Fish and Wildlife Coordination Act, and the Food Securities Act. These programs were previously described in the SCORP *Wetlands Addendum*.

Several state agencies are involved with wetland issues. Most are units of the Department of Environment and Natural Resources. Agency concerns for wetlands protection are most often associated with other primary program concerns for natural resource protection and management.

The North Carolina Constitution clearly states that wetlands are to be protected.

*It shall be the policy of this State to conserve and protect its lands and waters for the benefit of all its citizenry, and to this end it shall be a proper function of the State of North Carolina and its political subdivisions . . . to preserve as a part of the common heritage of this State its forests, wetlands, estuaries, beaches, historical sites, open lands, and places of beauty.*

(Art. XIV, Sec. 5; adopted by vote of the people in 1972)

The state programs currently affecting wetlands through regulation, land acquisition, and general policies are shown in Table VII-1.

**Table VI-1. Major State Programs Affecting the Use of Wetlands in North Carolina.**

AGENCY	PROGRAM OR ACT
<b>N.C. Department of Environment and Natural Resources:</b>	
Division of Coastal Management	<ul style="list-style-type: none"> <li>• Coastal Area Management Act (1974)</li> <li>• Dredge and Fill Act (1969)</li> <li>• Consistency Review for Federal Permits</li> <li>• Coordination of state review for proposed Section 404 projects</li> <li>• Coastal Reserve Program and National Estuarine Reserve System</li> </ul>
Division of Water Quality	<ul style="list-style-type: none"> <li>• NPDES permits and non-discharge permits</li> <li>• 401 water quality certification permit program in oversight of 404 regulation of discharge of pollutants into waters (including wetlands)</li> <li>• 201 Plans and Grants and Loans for Wastewater Treatment Facilities</li> <li>• Nonpoint source water pollution management plan</li> </ul>
Division of Soil and Water Conservation	<ul style="list-style-type: none"> <li>• Quality control and review of Fish and Wildlife Service' s National Wetlands Inventory mapping project in North Carolina.</li> <li>• Public information materials on wetlands.</li> <li>• Agriculture Cost-share Program for Best Management Practices</li> <li>• Small Watershed Act (1959)</li> </ul>
Division of Forest Resources	<ul style="list-style-type: none"> <li>• Development of Forestry Best Management Practices Guidelines for wetlands.</li> <li>• Cost-sharing grants to reduce runoff in nutrient-sensitive areas.</li> </ul>
Division of Marine Resources	<ul style="list-style-type: none"> <li>• Management, research, enforcement, and enhancement of estuarine and marine fisheries.</li> </ul>
Office of Conservation and Community Affairs	<ul style="list-style-type: none"> <li>• Natural Heritage Inventory and Protection Plan.</li> <li>• Natural Heritage Program review of 404 and CAMA permit applications in wetlands.</li> </ul>
Division of Parks and Recreation	<ul style="list-style-type: none"> <li>• Acquisition and maintenance of the state parks system, including wetland areas.</li> <li>• System-wide Plan for the State Parks System.</li> <li>• Statewide Comprehensive Outdoor Recreation Plan, including the Wetlands Protection Plan.</li> </ul>
Division of Land Resources	<ul style="list-style-type: none"> <li>• Dam Safety Act (1967)</li> <li>• Sedimentation Pollution Control Act (1973)</li> <li>• Mining Act (1971)</li> </ul>
Division of Environmental Health	<ul style="list-style-type: none"> <li>• Rules for location of septic tanks in wetlands.</li> </ul>
Division of Water Resources	<ul style="list-style-type: none"> <li>• Instream Flow Need Determination</li> <li>• Aquatic Weed Control</li> <li>• Water Resources Development Project Grants</li> <li>• Stream Watch</li> </ul>
Division of Budget, Planning & Analysis	<ul style="list-style-type: none"> <li>• Coordinated DENR review of environmental impact statements and environmental assessments under federal and state Environmental Policy acts.</li> </ul>
<b>Wildlife Resources Commission</b>	<ul style="list-style-type: none"> <li>• Review of federal Clean Water Act 404 permit applications; adopted Policies and Guidelines for Conservation of Wetlands and Aquatic Habitats in 1988.</li> <li>• Acquisition and management of the state gamelands system, including wetland areas.</li> </ul>
<b>Dept. of Crime Control &amp; Public Safety</b>	<ul style="list-style-type: none"> <li>• National Flood Insurance Program</li> </ul>

## **National Goal of No-Net-Loss of Wetlands**

The report released late in 1988 by the National Wetlands Policy Forum (NWPF), which was composed of representatives of many interest groups convened by The Conservation Foundation at the request of the U.S. Environmental Protection Agency, recommended:

*...the nation establish a national wetlands protection policy to achieve no overall net loss of the nation's remaining wetlands base, as defined by acreage and function, and to restore and create wetlands, where feasible, to increase the quality and quantity of the nation's wetlands resource...*

## **Current Effectiveness of Wetlands Protection**

North Carolina's Coastal Area Management Act (CAMA) and Dredge-and-Fill permit programs have helped curtail losses of salt marsh and brackish water wetlands that lie within designated "areas of environmental concern" along coastal rivers, estuaries, and the ocean.

While existing protection mechanisms have been valuable in slowing the wholesale destruction and alteration of wetlands that once existed, wetlands protection is not uniform throughout the state. Existing laws and regulations have been most effectively applied to protection of marshes in the coastal region. But only the Section 404 permit program of the federal Clean Water Act, administered by the U.S. Army Corps of Engineers, applies to other wetlands throughout North Carolina. The major existing regulatory tool at the state's disposal for wetlands protection is the 401 Water Quality Certification, which is required for all federal Section 404 permits for the discharge of dredged or fill material in wetlands. The U.S. Environmental Protection Agency is encouraging states to use 401 Water Quality Certification to the greatest extent possible for wetlands protection.

There are no state laws to protect wetlands outside the coastal region. The U.S. Army Corps of Engineers has increased its actions to stop wetlands damage and has assigned enforcement staff to locations in all regions of the state. Nevertheless, freshwater wetlands, Carolina bays, pocosins, riverine bottomlands, and bogs in North Carolina's inner Coastal Plain, Piedmont, and Mountain regions remain vulnerable and should therefore receive priority for acquisition and protection efforts.

The federal 404 permit program has been an imperfect tool for protecting wetlands from conversion to other uses. Projects up to 10 acres in size in many areas are generally exempt from the 404 permit program, which has led to cumulative losses of wetlands. The federal wetland program exempts the forest-related activities most destructive of wetlands from regulation. 404 permits are rarely issued for forestry-related activities, even though that industry converts natural wetlands to pine plantations at high rates. Exempt agricultural and forestry activities contribute to continued losses of wetlands. Due to limited funds and staff resources, monitoring and enforcement efforts have been inadequate to ensure compliance with even the existing wetlands protection laws.

Historically, conversion of wetlands for agricultural uses through drainage and clearing has caused significant losses of wetlands. The "Swampbuster" provision of the federal Food

Security Act of 1985 helps discourage conversion of wetlands to farmlands. This provision denies farm program benefits on all acres operated by a landowner who converts wetlands to crop production. This change should help to slow the conversion of wetlands to agriculture.

## **Wetlands Trends**

Wetlands protection continues to be a growing public policy issue in North Carolina. Public awareness of the consequences of wetlands destruction has increased, due in part to major public information efforts initiated in 1988 and 1989 by a combination of citizen conservation organizations (including the N.C. Coastal Federation, Environmental Defense Fund, and N.C. Wildlife Federation) as well as the N.C. Wildlife Resources Commission. The local news media have devoted special attention to the issue as well (the WRAL-TV "Save Our Coast" feature programs and public exhibitions is a prime example) in an effort to heighten public awareness of urgent wetlands issues.

A key element in wetlands protection is the location and inventory of existing wetlands. The U.S. Fish and Wildlife Service (FWS) is working to map all wetlands in the nation through its National Wetlands Inventory (NWI). That project is the first attempt to systematically and comprehensively map all North Carolina's wetlands. To date, of the 955 NWI maps, all but 13 maps covering areas along the North Carolina/South Carolina state line are completed or in final draft.

Completion of the NWI in North Carolina will provide an accurate estimate of the state's wetlands acreage and will show in detail where the wetlands are located. Updating the inventory will provide information on wetlands losses and status in the future.

The Center for Geographical Information and Analysis (CGIA) is currently under contract to digitize state wetlands. Most of the state east of Interstate 95 has been completed. The CGIA land use maps should give a better picture of the state's wetlands. The map will include Wet Pine Flats, a type of wetland community not included in the National Wetlands Inventory.

Currently, the Department of Environment and Natural Resources has no policy to guide its divisions in carrying out their responsibilities for wetlands protection under existing statutory authority. The Division of Water Quality uses the "Interim Guidance for Wetlands Protection" to work toward the goal of "no net loss" of wetlands by acreage and function within the purview of existing state law. It is also the purpose of the guidance to provide permit applicants with a timely, coordinated, and consistent agency response when wetlands are involved.

The Environmental Management Commission to date has designated seven sections of estuarine water bodies as Outstanding Resource Waters, for which anti-degradation water quality standards and regulations have been adopted. Although not directly tied to wetlands management, the regulations will have the effect of restricting development in the vicinity of those sounds.

Wetlands inventory and protection planning was a major component of the Albemarle-Pamlico Estuarine Study, a five-year project sponsored by many state and federal agencies and funded mainly by the U.S. Environmental Protection Agency. The study (APES) was designed to restore and protect the natural resources and water quality of the Tidewater region of northeastern North Carolina (a 32 county area). Considerable attention is directed to wetlands-related topics and protection plans for the estuaries and associated wetlands. Recommendations from this study have been made.

In 1988, the N.C. Wildlife Resources Commission adopted and implemented *Policies and Guidelines for Conservation of Wetlands and Aquatic Habitats*, which established consistency in standards and review procedures throughout the agency. The guidelines broadened use of field personnel throughout the state, allowing many more projects to receive adequate review for wetlands habitat protection needs.

The N.C. Division of Forest Resources, in cooperation with the N.C. State University Extension Service, the forestry industry, and private landowners, is researching the problem of maintaining forested wetlands for silvicultural uses without seriously impairing the other functions and benefits of wetlands. North Carolina's forested wetlands account for about 2.7 million acres or 15 percent of the total forested land in the state. Guidelines are being developed for Forestry Best Management Practices, which can allow silviculture and logging to continue with minimum impairment of the hydrologic functioning of forested wetlands. Proper harvesting procedures, construction and maintenance of forest roads, and forest regeneration techniques are vital if forested wetlands are to continue providing their many benefits in addition to timber resources.

A variety of actions by other state and federal agencies are likely to occur as agencies review their programs to determine how to implement the goals and recommendations of the National Wetlands Policy Forum. As one example, in 1989 four federal agencies with jurisdiction over various aspects of wetlands protection – the Corps of Engineers, the Environmental Protection Agency, the Fish and Wildlife Service, and the Soil Conservation Service – agreed to use the same wetlands delineation methods, which removes the confusion over jurisdictional boundaries for the various wetlands regulatory programs that previously used differing wetlands delineation methods.

The federal Emergency Wetlands Act of 1986 and the Wetland Reserve Program promote the conservation of wetlands through state and federal cooperation. The Act provides for federal wetland acquisition and promotes the use of Land and Water Conservation Fund monies for acquisition of wetlands for public outdoor recreation. The Department of Environment and Natural Resources has been working with the FWS to establish priorities for wetlands conservation in North Carolina. Those priorities will be presented in a following section of this report.

## **Issues of National Concern**



There are opportunities to do more to protect wetlands at both the state and national levels. The following issues of national concern have been identified:

- Completion of the National Wetlands Inventory should be expedited, including completion of wetlands maps, analyses, and summary of findings for all states.
- Federal legislation for permitting programs for alteration or construction in or near wetlands does not adequately protect wetlands. Activities currently exempt from federal permit programs, such as agriculture and forestry, may disturb some wetland functions. A process oriented to protect wetlands, not to permit activities in wetlands, is needed if the nation's wetlands are to be protected.
- State and federal agencies should place a high priority on identifying, describing, acquiring, and protecting the most important and threatened remaining wetlands in the nation and in each state.
- Evaluation and protection of wetlands on existing public lands is needed. Many freshwater wetland sites on federal lands in North Carolina are currently subject to destruction by the management agencies. Agency policies should stress wetlands and riparian areas protection.
- Wetlands need to be monitored. Monitoring should include the identification of non-point source pollution.
- Measures to channel and guide growth should be used wherever possible to halt further wetlands destruction. Existing tax or other subsidies and incentives contributing to wetlands conversion should be removed.
- Provide the Corps of Engineers with clear jurisdictional directive to clarify which wetlands are covered by the 404 permitting program. A clear definition of normal agriculture and silviculture is needed.
- Extend federal regulatory authority to freshwater wetlands not now regulated by Section 404.
- Increase federal support and direction for research to establish the values, effects, and costs of wetlands actions and to aid policy development and management decisions.
- Amend the National Flood Insurance Act of 1968 to discourage rebuilding of structures substantially damaged by floods and to prohibit filling of fringe areas of flood areas.
- Increase federal support to state wetlands protection programs through financial and technical assistance, oversight, centralized data base, research, and acquisition funds.
- Establish a consistent wetlands mitigation policy. Projects involving unavoidable wetlands modification should have appropriate mitigation measures developed and implemented to ensure that no net loss of wetlands occurs.

- Funding is necessary for all the above-mentioned inventories, mapping, research, regulation, and acquisition; sources must be identified and developed.

Similar recommendations were made late in 1988 by the National Wetlands Policy Forum (NWPF), the body representing a broad range of public and private sectors, convened by The Conservation Foundation at the request of EPA to review existing federal policies, laws, and programs and major policy options for protecting and managing the nation's wetlands. The centerpiece of its recommendations was the need to establish a national wetlands protection goal to guide all government programs affecting wetlands. As previously stated, the NWPF recommended:

*...the nation establish a national wetlands protection policy to achieve no overall net loss of the nation's remaining wetlands base, as defined by acreage and function, and to restore and create wetlands, where feasible, to increase the quality and quantity of the nation's wetlands resource base.*

The NWPF report explained:

*Although calling for a stable and eventually increasing inventory of wetlands, the goal does not imply that individual wetlands will in every case be untouchable or that the no-net-loss standard should be applied on an individual permit basis — only that the nation's overall wetlands base reach equilibrium between losses and gains in the short run and increase in the long run.*

To achieve this goal, a number of recommendations were made:

- institute a more effective wetlands regulatory program;
- provide private wetland owners with better incentives to protect wetlands;
- expand public and private wetlands acquisition and preservation programs; and
- reduce wetlands losses resulting from government programs that either affect wetlands directly or encourage private landowners to alter them.

Also recommended are:

- increased research efforts on the functions, uses, and benefits provided by wetlands, and management techniques to support these; measures to effectively restore and create viable wetlands; and
- adequate public education to disseminate information on wetlands values and protection measures.

Preparation of a state wetlands conservation plan by each state is recommended as a foundation for its wetlands protection and management activities.

## **Wetlands Protection Alternatives**

A variety of approaches could be combined more effectively to ensure protection for wetlands. Those alternatives were described in the SCORP Wetlands Addendum (1988) and may be summarized to include:

- Establishment of comprehensive wetlands protection policies and programs.
- Wetlands acquisition by federal, state, and local government agencies or private conservation organizations.
- Increased public education.
- Expansion of land use and wetlands conversion regulations.
- Improved standards and policies for agricultural and silvicultural practices.
- Completion of wetlands and critical natural areas inventories.
- Guided investments in public works projects.
- Greater involvement of local governments.
- Establishment of mitigation policies and requirements.
- Financial (tax) incentives for wetlands protection and financial disincentives for wetlands destruction.
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A number of protection efforts related to wetlands protection were identified in *The Report of the President's Commission on Americans Outdoors, the Legacy, the Challenge* (1987), which should be incorporated in the National Wetlands Conservation Plan.

- *Remove incentives, such as direct subsidies and tax code provisions, that promote alteration or destruction of wetlands. The Coastal Barrier Resources Act and the Food Security Act of 1985 represent positive approaches to removal of incentives to wetlands destruction.*
- *Develop a national program of wetlands conservation to assist the Department of the Interior in achieving the goals of the North American Waterfowl Management Plan.*
- *Require federal land and water development and permitting and licensing agencies (e.g., Bureau of Reclamation, Corps of Engineers, and Soil Conservation Service) to develop specific wetlands conservation measures in all subsequent project planning, permitting, licensing, and authorization reports.*
- *Require existing water resource development projects to have wetlands conservation measures incorporated into their operation and maintenance programs.*
- *Establish a consistent wetlands mitigation policy. Projects involving unavoidable wetlands modification should have appropriate mitigation measures developed and implemented to ensure that no net loss of wetlands occurs.*

## **Priorities for Wetlands Acquisition**

Section 301 of the Emergency Wetlands Resources Act (P.L. 99-645) directs the U.S. Department of the Interior to develop and periodically review and revise a National Wetlands Priority Conservation Plan. The purpose of this plan is to identify important wetlands that warrant consideration for federal or state acquisition under the Land and Water Conservation Fund and as a guide for the federal appropriations process.

Accordingly, the individual field offices of the U.S. Fish and Wildlife Service (FWS) were directed to compile lists of wetlands deserving acquisition priorities within each state. Sites on the list were required to meet three threshold criteria identified by Congress:

- wetland types that have declined within an ecoregion;
- wetland sites subject to identifiable threat of loss or destruction; and
- wetland sites with diverse functions and values and/or especially high or special values for specific wetlands functions.

In 1988, the FWS Raleigh field office compiled a preliminary nomination list of priority wetlands in North Carolina that totaled 353 sites. Most were nominated by the N.C. Department of Environment and Natural Resources, coordinating responses from several state agencies. Late in 1988, the FWS convened an advisory panel composed state and federal agency representatives and academic researchers. The panel was asked to review the entire preliminary nomination list and select the highest priority wetlands sites to recommend for protection. The FWS then compiled criteria forms for the highest priority wetland sites.

For a listing of the highest priority wetland sites in the FWS Wetlands Conservation Plan for North Carolina, consult the U.S. Fish and Wildlife Service.

## **RECOMMENDED ACTIONS FOR WETLANDS PROTECTION**

A comprehensive program of state actions for wetlands protection may be a product of several current initiatives in North Carolina. The Department of Environment and Natural Resources is reviewing existing wetlands programs, regulations, and policies, making recommendations for improvement, and drafting interim Departmental policies and guidelines. The N.C. General Assembly in its 1989 session established a legislative study commission to evaluate state wetlands protection programs and to develop legislative proposals.

In the meantime, a number of interim protection strategies may be considered. The Environmental Defense Fund report recommends that those actions include the following:

- Denial of 401 water quality certification for proposed projects that would result in wetland destruction, unless the 404(b)(1) guidelines are met. Wetland destruction would be permitted only for those activities that are unavoidable.
- EMC classification of wetlands as special waters of the state, with associated standards to protect their uses.

- State decertification of general 404 permits causing significant adverse impacts.
- Complete the National Wetlands Inventory for North Carolina as soon as possible.
- Establish mitigation policies for unavoidable wetlands loss, with up-front, value-for-value replacement.
- Designate functional primary nursery areas, including those in inland waters.
- Develop economic incentives to reduce rates of wetlands loss.
- Implement a campaign to educate the public on the values and vulnerability of wetlands.